

WHAT IS CLAIMED IS:

1. Anelectronic settlement system for settling up a transaction through a communication network, comprising:

5 a settlement apparatus which performs the settlement of the transaction;

a billing terminal connecting to said settlement apparatus via the communication network; and

10 a paying terminal, connecting to said settlement apparatus via the communication network,

wherein said settlement apparatus performs the settlement of transaction by synchronizing a communication to said billing terminal with a communication to said paying terminal when said settlement apparatus sets up a transaction identifying number which
15 identifies the transaction and when said paying terminal transmits the same transaction identifying number to said settlement apparatus.

2. An electronic settlement system as claimed in claim 1,
20 wherein said billing terminal connects to said settlement apparatus via a commercial telephone line or a private line, and said paying terminal connects to said settlement apparatus via a radio telephone communication.

25 3. A settlement apparatus performing a settlement of a transaction, which communicates with a billing terminal performing billing of the transaction and with a paying terminal performing paying of the transaction, the apparatus comprising:

30 a first communication unit connecting to the billing terminal via a first communication network;

a second communication unit connecting to the paying terminal via second communication network; and

a processing unit for processing the settlement of transaction, said processing unit synchronizing a communication

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to the billing terminal with a communication to the paying terminal when said processing unit sets up a transaction identifying number to identify the transaction, and when the paying terminal transmits to said settlement apparatus the same transaction identifying number.

4. An settlement apparatus as claimed in claim 3, wherein said first communication unit connects to the billing terminal via at least one of the Internet, a commercial telephone line, and a private line, and said second communication unit connects to the paying terminal via radiotelephone communication.

5. An settlement apparatus as claimed in claim 4, wherein said first communication unit transmits to the billing terminal said transaction identifying number in order to identify the transaction, and

said processing unit synchronizes a communication to the billing terminal with a communication to the paying terminal, and said first communication unit transmits to the billing terminal a synchronization confirmation signal which indicates establishment of synchronization, when the billing terminal notifies said transaction identifying number to at least one of the paying terminal and a user of the paying terminal, and when the paying terminal transmits to said settlement apparatus the same transaction identifying number.

6. A settlement apparatus as claimed in claim 5, wherein said processing unit processes the settlement of transaction between the billing terminal and the paying terminal, both of which are synchronized with each other by said transaction identifying number.

7. A settlement apparatus as claimed in claim 6, wherein said first communication unit receives a purchase amount of the

transaction from the billing terminal, and said processing unit processes the settlement of the transaction for a user of the paying terminal based on said purchase amount that said first communication unit receives from the billing terminal.

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8. A settlement apparatus as claimed in claim 6, wherein:

said first communication unit receives said purchase amount of the transaction from the billing terminal;

said second communication unit transmits said purchase amount to the paying terminal so that the paying terminal confirms said purchase amount, and receives a final purchase confirmation signal;

said processing unit performs a settlement processing after said second communication unit receives said final purchase confirmation signal from the paying terminal;

said first communication unit transmits a settlement completion notification, which notifies completion of the settlement processing performed by said processing unit to the billing terminal; and

said second communication unit transmits to the paying terminal a receipt which notifies the receiving of said purchasing amount of the settlement processed by said processing unit.

9. A settlement apparatus as claimed in claim 6, further comprising a billing terminal database storing information about the billing terminal,

wherein said first communication unit receives from the billing terminal an identifying number to identify the billing terminal, and

said processing unit retrieves information about the billing terminal from said billing terminal database and confirms a registration of the billing terminal, based on said identifying number.

10. A settlement apparatus as claimed in claim 9, wherein said second communication unit transmits to the paying terminal said information about the billing terminal, for the paying terminal to confirm the billing terminal, retrieved from said billing terminal database.

11. A settlement apparatus as claimed in claim 6, further comprising a paying terminal database which stores information about the paying terminal,

wherein said second communication unit detects a calling telephone number of the paying terminal, and

said processing unit retrieves information about a user of the paying terminal from said paying terminal database based on the calling telephone number, and said processing unit inquires at least one of a registration status of the user, a payment history of the user, and available amount of the user.

12. A settlement apparatus as claimed in claim 11, wherein said processing unit retrieves at least a part of attribute information of the user of the paying terminal from said paying terminal database, and said first communication unit transmits to the billing terminal at least a part of said attribute information of the user of the paying terminal.

13. A settlement apparatus as claimed in claim 11, wherein when said second communication unit receives a message which demands a purchase history of the user of the paying terminal, said processing unit retrieves said purchase history of the user from said paying terminal database, and said second communication unit transmits said purchase history to the paying terminal.

14. A settlement apparatus as claimed in claim 5, wherein said processing unit retrieves authentication information of the user

of the paying terminal from said paying terminal database, and
said first communication unit, for the billing terminal to
authenticate the user, transmits said authentication information
of the user to the billing terminal.

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15. A settlement apparatus as claimed in claim 14, wherein said
authentication information of the user is a facial portrait of
the user.

10 16. A settlement apparatus as claimed in claim 15, wherein:

said first communication unit receives a signal requesting
password authentication of the user from the billing terminal;

said processing unit retrieves information about the
password of the user of the paying terminal from said paying terminal
15 database;

said second communication unit transmits an order of password
request to the paying terminal and receives a password inputted
by the paying terminal from the paying terminal;

said processing unit, receiving said password from the paying
20 terminal, inquires to said information about said password
retrieved from said paying terminal database; and

said first communication unit authenticates the user by
transmitting password inquiry result performed by said processing
unit to the billing terminal.

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17. A settlement apparatus as claimed in claim 5, wherein:

said processing unit retrieves authentication information
registered by the user of the paying terminal from said paying
terminal database;

30 said second communication unit transmits a order to inquire
said authentication information to the paying terminal and receives
an answer the paying terminal inputting corresponding to said order
from the paying terminal; and

said processing unit authenticates the user by verifying

said answer received from the paying terminal against said authentication information retrieved from said paying terminal database.

5 18. A settlement apparatus as claimed in claim 17, wherein said first communication unit, transmitting a verifying result by said processing unit to the billing terminal, notifies an authentication result of the user to the billing terminal.

10 19. A settlement apparatus as claimed in claim 17, wherein said paying terminal database stores a plurality of authentication information of the user and said processing unit retrieves from said paying terminal database at least one of said plurality of authentication information at random.

15 20. A settlement apparatus as claimed in claim 5,
wherein said billing terminal database stores an authentication method demanded by the billing terminal and said paying terminal database stores an authentication method demanded
20 by the user, and

said processing unit retrieves said authentication method demanded by the billing terminal from said billing terminal database and retrieves said authentication method demanded by the paying terminal from said paying terminal database, selects an agreeable said authentication method based on said authentication
25 method demanded by the billing terminal and said authentication method demanded by the paying terminal, and authenticates the user.

30 21. A settlement apparatus as claimed in claim 20, wherein if an authentication accuracy of said authentication method demanded by the billing terminal differs from an authentication accuracy of said authentication method demanded by the user, the authentication method which has higher authentication accuracy is selected for said agreeable authentication method.

22. A settlement apparatus as claimed in claim 20, wherein if said authentication method demanded by the billing terminal does not matches with said authentication method demanded by the user, said processing unit refuses to authenticate the user, and said second communication unit transmits to the paying terminal information indicating that the authentication is refused.

23. A settlement apparatus as claimed in claim 20 through claim 22, wherein said authentication method, demanded by at least one of the billing terminal and the user, appoints at least one of visual authentication using facial portrait data of the user, password authentication using password which is the user registered for authentication information, and voice authentication using voice data the user registered.

24. A settlement apparatus as claimed in claim 23, wherein if said authentication method demanded by the user appoints refusal of said visual authentication and said authentication method demanded by the billing terminal appoints the authentication method which does not essentially requires said visual authentication, said processing unit selects said agreeable authentication method which does not includes said visual authentication.

25. A settlement apparatus as claimed in claim 23, wherein if said authentication method demanded by the user appoints refusal of said visual authentication and said authentication method demanded by the billing terminal appoints the authentication method which essentially requires said visual authentication, said processing unit refuses authentication of the user and said second communication unit transmits to the paying terminal information indicating that the authentication is refused because the agreement of authentication method is not made.

26. A settlement apparatus as claimed in claim 23, wherein if said authentication method demanded by the user appoints addition of said password authentication, said processing unit selects agreeable authentication method by adding said password

5 authentication to said authentication method demanded by the billing terminal.

27. A billing terminal performing billing of a transaction against a paying terminal paying for the transaction, by

10 communicating with a settlement apparatus settling the transaction, comprising:

a communication unit which connects to the settlement apparatus via a communication network, said communication unit transmitting an identification number to identify said billing terminal to the settlement apparatus and receiving from the settlement apparatus a synchronization confirmation signal indicating establishment of synchronization with the paying terminal; and

a processing unit which performs billing of the transaction.

28. A billing terminal as claimed in claim 27, wherein said communication unit connects to the settlement apparatus via at least one of the Internet, a commercial telephone line, a private line, and radiotelephone communication.

29. A billing terminal as claimed in claim 28, wherein

said communication unit receives a transaction identifying number to identify the transaction from the settlement apparatus, and

when the paying terminal transmits a transaction identifying number which is the same as said transaction identifying number to the settlement apparatus, and said communication unit receives from the settlement apparatus a synchronization confirmation signal indicating the establishment of synchronization with the

paying terminal, and the apparatus further comprising

a display unit displaying said transaction identifying number in order to notify said transaction identifying number to a user of the paying terminal.

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30. A billing terminal as claimed in claim 28,

wherein said communication unit receives from the settlement apparatus said transaction identifying number to identify the transaction, and when the paying terminal transmits to the settlement apparatus said transaction identifying number which is the same as said transaction identifying number, said communication unit receives from the settlement apparatus a synchronization confirmation signal indicating the establishment of the synchronization with the paying terminal, the apparatus further comprising

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a short range communication unit transmitting said transaction identifying number to the paying terminal by communicating with the paying terminal via at least one of an optical communication and a wireless communication.

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31. A billing terminal as claimed in claim 29 or claim 30, wherein the settlement processing of the transaction is performed against the paying terminal synchronized with said billing terminal, when said communication unit receives from the settlement apparatus said synchronization confirmation signal indicating the establishment of synchronization with the paying terminal.

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32. A billing terminal as claimed in claim 31, wherein said billing terminal receives from the settlement apparatus a the settlement completion notification to notify a completion of the settlement processing when said communication unit transmits to the settlement apparatus a purchase amount of the transaction and the settlement apparatus performs the settlement processing of the transaction against a user of the paying terminal synchronized

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with said billing terminal.

33. A billing terminal as claimed in claim 31, wherein said communication unit receives from the settlement apparatus at least a part of attribute information of the user of the paying terminal.

34. A billing terminal as claimed in claim 33, wherein said communication unit receives from the settlement apparatus said authentication information of the user of the paying terminal, and said processing unit authenticates the user based on said authentication information received from the settlement apparatus.

35. A billing terminal as claimed in claim 34, wherein said authentication information of the user is a facial portrait of the user.

36. A billing terminal as claimed in claim 35, wherein said communication unit transmits to the settlement apparatus a signal to demand authentication of the user using a password and receives from the settlement apparatus a result of said authentication of the user using a password when said processing unit is not able to authenticate the user using said facial portrait of the user.

37. A billing terminal as claimed in claim 33, further comprising:
an item choice unit by which the user of the paying terminal prompt to choose a purchasing item, said item choice unit prompting the user to choose an item when said communication unit receives from the settlement apparatus said synchronization confirmation signal indicating the establishment of synchronization with the paying terminal; and

an item sending unit through which a purchased item to be sent out;

wherein said communication unit transmits to the settlement apparatus a price of the item chosen by the user as said purchase amount of the transaction, and when said communication unit receives the settlement completion notification from the settlement apparatus, said item sending unit sends out the item chosen by the user based on the settlement completion notification.

38. A billing terminal for performing billing of a transaction, communicating with a settlement apparatus performing settlement of the transaction against a paying terminal performing a paying of the transaction, and communicating with a computer terminal indicating a status of the transaction to provide information about the transaction, the billing terminal comprising:

a first communication unit connecting to the settlement apparatus via a communication network, said first communication unit transmitting an identifying number identifying said billing terminal to the settlement apparatus and receiving a transaction identifying number identifying the transaction from the settlement apparatus and said first communication unit receiving from the settlement apparatus a synchronization confirmation signal indicating the establishment of synchronization with the paying terminal;

a second communication unit connecting to the computer terminal via the communication network, said second communication unit transmitting to the computer terminal for a user of the paying terminal said transaction identifying number in order to notify said transaction identifying number; and

a processing unit performing billing of the transaction.

39. A billing terminal as claimed in claim 38, wherein the settlement processing of the transaction against the paying terminal synchronized with said billing terminal is performed when said first communication unit receives from the settlement apparatus said synchronization confirmation signal indicating the

establishment of synchronization with the paying terminal.

40. A billing terminal as claimed in claim 39, wherein said second communication unit receives from the computer terminal a purchase amount of the transaction, and

when said first communication unit transmits said purchase amount to the settlement apparatus and the settlement apparatus performs the settlement processing of the transaction against a user of the paying terminal synchronized with said billing terminal, said first communication unit receives from the settlement apparatus a settlement completion notification which notifies a completion of the settlement processing.

41. A billing terminal as claimed in claim 40, wherein said second communication unit, for the computer terminal to indicate a state of the transaction, transmits to the computer terminal at least one of said synchronization confirmation signal and the settlement completion notification for said first communication unit receiving from the settlement apparatus.

42. An authentication apparatus for communicating with a first terminal and with a second terminal demanding to authenticate a user of the first terminal, and performing the authentication demanded by the second terminal, the apparatus comprising:

a user database storing authentication information registered by a user of the first terminal;

a first communication unit connecting to the first terminal via a first communication network;

a second communication unit connecting to the second terminal via a second communication network; and

a processing unit performing the authentication, wherein: said processing unit sets up an identifying number to identify the authentication demanded by the second terminal, and when the first terminal transmits the same identifying number as

said identifying number to said authentication apparatus, synchronizes a communication to the first terminal with a communication to the second terminal;

5 said second communication unit receives from the second terminal an authentication demand to authenticate the user of the first terminal;

 said processing unit retrieves from said user database authentication information to authenticate the user of the first terminal;

10 said first communication unit transmits to the first terminal an order to inquire said authentication information and receives from the first terminal an answer inputted by the first terminal corresponding to said order;

15 said processing unit, by inquiring said answer received from the first terminal with the authentication information retrieved from said database, authenticates the user of the first terminal; and

20 said second communication unit, by transmitting to the second terminal an authentication result judged by said processing unit, authenticates the user of the first terminal.

43. An authentication apparatus as claimed in claim 42, wherein said authentication information, said processing unit retrieving from said database, registered by the user of the first terminal is at least one of following data, a password of the user, voice data spoken by the user, facial portrait image data of the user, at least one of iris and retina data of the user, and finger print image data of the user; and said answer said processing unit receiving from the first terminal in order to inquire with said authentication information is at least one of following data, character data, voice data, and image data.

44. A recording medium which stores a program for a computer, communicating with a billing terminal performing billing of a

transaction and with a paying terminal performing paying of the transaction, and performs a settlement of the transaction, said program comprising:

a first communication module which prompts to communicate to the billing terminal via at least one of a commercial telephone line and a private line;

a second communication module which prompts to communicate with the paying terminal via a radiotelephone communication, and

a processing module which prompts to perform a settlement processing of the transaction, said processing module sets up a transaction identifying number which identifies the transaction and said processing module synchronizes a communication to the billing terminal with a communication to the paying terminal when the paying terminal transmits a transaction identifying number which is the same as said transaction identifying number to the computer.

45. A business method which is performed by a settler who intermediates a settlement of transaction while communicating with a demander who performs billing of a transaction and with a payer who performs paying of the transaction, comprising steps of:

setting up a transaction identifying number of the transaction for said settler to identify the transaction;

notifying said transaction identifying number to the demander;

notifying said transaction identifying number from the demander to the payer; and

performing a settlement processing of the transaction between the demander and the payer corresponding to each other by said transaction identifying number when said transaction identifying number same as said transaction identifying number is notified from the payer to said settler.

46. A method of settlement using a settlement apparatus which

performs the settlement of transaction while communicating with a billing terminal which performs billing of a transaction and with a paying terminal which performs paying of the transaction, the method comprising steps of:

5 setting up a transaction identifying number to identify the transaction;

 transmitting said transaction identifying number to the paying terminal;

 synchronizing a communication to the billing terminal with
10 a communication to the paying terminal when the paying terminal transmits said transaction identifying number to the settlement apparatus;

 transmitting a synchronization confirmation signal which indicates that the synchronization is established with the billing
15 terminal; and

 performing a process of settlement of the transaction between the billing terminal and the paying terminal, both of which are synchronized with each other by said transaction identifying number, based on said purchase amount.

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47. A settlement apparatus for settling a transaction while communicating with a billing terminal which performs billing of a transaction and with a paying terminal which performs paying of the transaction, comprising:

25 a first communication unit connecting to the billing terminal via a first communication network;

 a second communication unit connecting to the paying terminal via a second communication network; and

 a processing unit performing the settlement processing of
30 the transaction, said processing unit setting up a transaction identifying number to identify the transaction performed by the paying terminal, and said settlement apparatus synchronizing a communication to the billing terminal with a communication to the paying terminal when the billing terminal transmits to the

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settlement apparatus the same transaction identifying number.

48. A settlement apparatus as claimed in claim 47, wherein:

said first communication unit transmits said transaction
5 identifying number to identify the transaction to the paying
terminal; and

said processing unit synchronizes the communication to the
billing terminal with the communication to the paying terminal
when the paying terminal transfers said transaction identifying
10 number to the billing terminal and the billing terminal transmits
the same transaction identifying number as said transaction
identifying number to said settlement apparatus, and said first
communication unit transmits a synchronization confirmation
signal indicating the establishment of synchronization with the
15 billing terminal.

49. A settlement apparatus as claimed in claim 48, wherein said
processing unit performs the settlement processing of the
transaction between the billing terminal and the paying terminal
20 synchronized with each other by said transaction identifying
number.

50. A billing terminal, communicating with a settlement
apparatus which performs a settlement of a transaction, and
25 performing billing of the transaction against a paying terminal
which performs paying of the transaction, the billing terminal
comprising:

a communication unit which connects to the settlement
apparatus via a communication network, said communication unit
30 transmitting an identifying number to identify the transaction
transferred from the billing terminal, said communication unit
receiving from the settlement apparatus a synchronization
confirmation signal indicating an establishment of
synchronization with the paying terminal which performs the

transaction identified by said transaction identifying number;
and

a processing unit which performs billing processing of the
transaction.

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51. A billing terminal as claimed in claim 50, further comprising
a pattern code read in unit which read in a pattern code patterning
said transaction identifying number at least one of a barcode and
a cyber code displayed on the paying terminal and retrieves said
transaction identifying number,

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wherein said communication unit transmits to the settlement
apparatus said transaction identifying number retrieved from said
pattern code read in unit and receives from the settlement apparatus
said synchronization confirmation signal indicating
establishment of synchronization with the paying terminal
performing transaction identified by said transaction identifying
number.

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52. A billing terminal as claimed in claim 50, further comprising
a short range communication unit communicating with the paying
terminal via at least one of an optical communication and a wireless
communication and receiving said transaction identifying number
from the paying terminal,

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wherein said communication unit transmits said transaction
identifying number to the settlement apparatus and receives from
the settlement apparatus said synchronization confirmation signal
indicating establishment of synchronization with the paying
terminal performing the transaction identified by said transaction
identifying number.

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53. A billing terminal as claimed in claim 51 or claim 52, wherein
when said communication unit receives from the settlement apparatus
said synchronization confirmation signal indicating
establishment of synchronization with the paying terminal, said

processing unit performs billing of the transaction against the paying terminal synchronized with said billing terminal.

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